

# Hepatitis B

**Definition:** A viral infection of the liver manifested variously as an asymptomatic condition, severe jaundice, or fulminating fatal disease. In 6%-10% of surviving infected adults and 30%-90% of infected young children, it results in a chronic carrier state with the potential for progression to cirrhosis or liver cancer. Infection is most frequently transmitted through injecting drug use, receipt of contaminated blood, occupational exposures, household contact, sexual contact, or at birth. ICD-9 codes 070.2 and 070.3.

## Summary

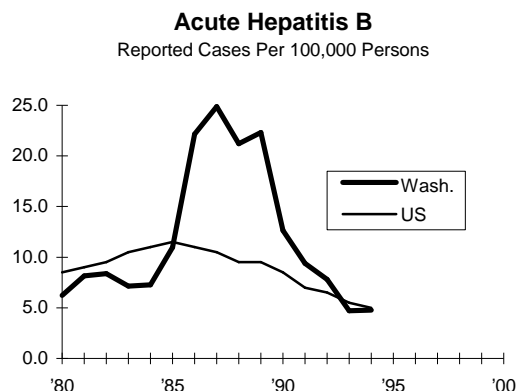
In 1994, there were 255 cases of acute hepatitis B in Washington. Only acute cases are reportable in Washington. Since many people with hepatitis B have no symptoms, this number does not reflect the actual amount of disease present in the population.

Although acute disease with this virus can be mild, a proportion of cases develop chronic infections which may progress to permanent liver damage or liver cancer. Control of hepatitis B is through vaccination and prevention of transmission.

## Time Trends

Acute hepatitis B infection rates vary considerably over time in Washington. During 1986-1989, about 1,000 cases occurred annually. This is about four-fold higher than 1994, when 255 new hepatitis B cases were reported (4.8/100,000). There was no detailed analysis of the increase in 1986-1989. It is possible increased testing and diagnosis resulted from a statewide outbreak of hepatitis A occurring at that time.

In recent years, acute hepatitis B rates in Washington have tended to be similar to those in the nation overall.

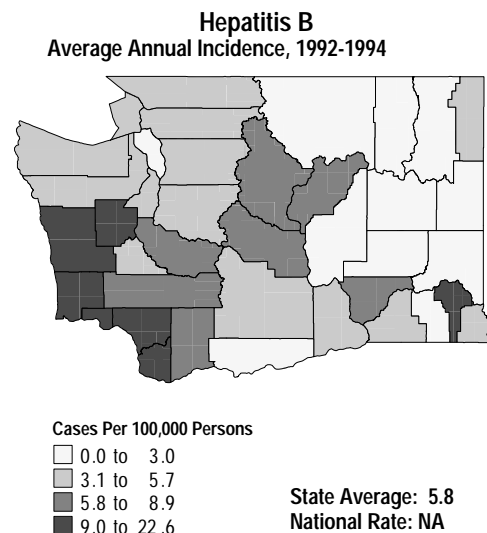


## Year 2000 Goal

No target for acute hepatitis B incidence has been developed for Washington state. The national year 2000 goal is a rate of 40.0/100,000 or lower for *estimated* cases. Numbers of estimated cases are much higher than numbers of reported cases. The rates shown here are based on reported cases. Until widespread hepatitis B vaccination occurs, it is likely that year-to-year fluctuations will continue to occur.

## Geographic Variation

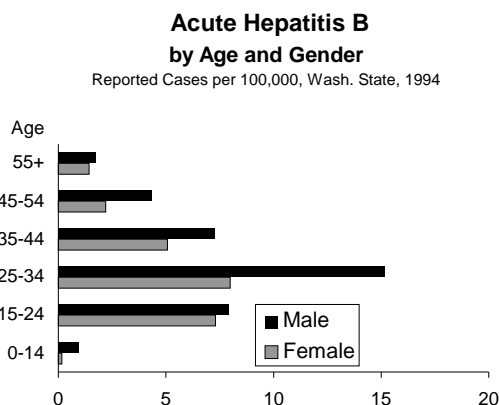
Certain Washington counties have recently had acute hepatitis B rates higher than the state average, although rates are based on small numbers in about half of counties. For the three year period 1992-1994, rates were higher than the state average in 14 counties and lower than average in 25 counties. Five counties had no acute hepatitis B cases in that period. Rates were particularly high in Cowlitz, Mason, Grays Harbor, and Clark Counties. The higher rates in Garfield and Wahkiakum counties were based on cases in



only one of the three years.

## Age and Gender

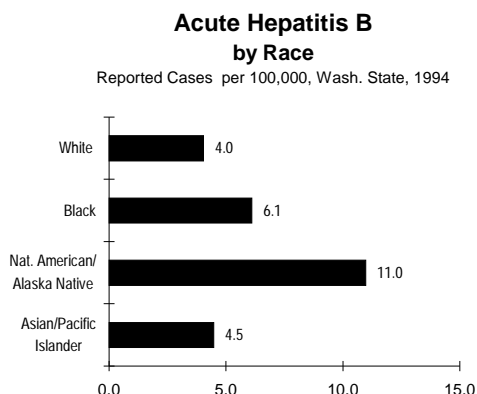
In 1994, the highest rates of acute hepatitis B infection occurred in adults 25-34 years of age. For all age groups, rates for males exceeded those for females. This difference is likely to reflect increased risk of infection through unprotected sexual activity and intravenous drug use.



There is particular risk of transmission during child delivery for women who have chronic hepatitis B infection. This route of transmission is particularly important in other countries. Acute hepatitis B infection is often undiagnosed in infants because of few or no symptoms. Acquiring hepatitis B infection in infancy increases the risk of becoming chronically infected and suffering long-term complications such as cirrhosis or liver cancer.

## Race and Ethnicity

Differences in acute hepatitis B rates by race and ethnicity are likely to reflect socioeconomic factors, not a genetic predisposition. In 1994, Native Americans had a rate of 11.0/100,000 as compared to 4.0 for whites.



## Other Measures of Impact and Burden

In 1994 mortality due to acute hepatitis B infections was under 1%, with 255 cases and two deaths. About 6%-10% of adults surviving acute infections will progress to chronic hepatitis B, an estimated 15-25 people among those first infected in 1994. In addition, 30%-90% of young children surviving acute infections will progress to chronic hepatitis B.

In 1994 there were 332 hospitalizations statewide associated with hepatitis B. Computerized records do not distinguish acute and chronic hepatitis B infections, and some of the hospitalizations for carriers may reflect disease processes unrelated to their hepatitis B infections. The mean length of stay was 6.2 days, accounting for 2058 total hospital days.

There is no statewide surveillance for chronic hepatitis B infections except those in pregnant women reported to the perinatal hepatitis B prevention program in the state Department of Health. People with chronic hepatitis B may have no symptoms but may transmit the infection to others. In addition, 25% or more may die of long-term complications such as cirrhosis of the liver or liver cancer. These complications are more apt to occur for chronic hepatitis B infections resulting from infection acquired during infancy. Elsewhere in the world, perinatal transmission of hepatitis B is more common and resulting infections are a major cause of liver cancer. In the United States, an estimated 22,000 births occur annually to infected women. The estimate for Washington state is 475.

## Risk and Protective Factors

**Transmission.** The hepatitis B virus is present in blood, saliva, semen, and vaginal fluids. Transmission can occur through inadvertent needle sticks, transfusion of untested blood, perinatal exposure, sexual exposure, injecting drug use, or sustained close personal contact with an infected person.

**Vaccine.** A three-dose series of hepatitis B vaccine can usually prevent infection. The vaccine is recommended for those with potential exposure, such as injecting drug users, health care providers including those involved with dental care, clients and staff of institutions for the developmentally disabled, hemodialysis patients, people receiving certain blood products (i.e. clotting factor concentrates), and household contacts of chronic carriers. Immunization is crucial for infants born to mothers with chronic hepatitis B infections, since they have already been exposed to the virus.

About a third of the cases have no identified risk factor, so no particular group can be targeted for prevention. Universal immunization at birth or at adolescence could reduce or eliminate hepatitis B infections.

### High Risk Groups

People with both acute and chronic hepatitis B infections can transmit the virus in blood and body secretions. Repeated exposure to foreign body fluids increases the risk of acquiring hepatitis B infections.

**Household and sexual contacts of acute or chronic cases.** Hepatitis B can be sexually transmitted. Although the precise mechanism of transmission is not known, household contacts without sexual exposure are also at increased risk of infection. This may occur through multiple minor exposures such as sharing a toothbrush or razor, or having contact with open wounds.

**Injecting drug users and others with exposure to contaminated needles.** Blood exposure from sharing needles increases the risk of transmission. Exposure can also occur through receiving acupuncture treatments or a tattoo with improperly sterilized equipment.

**People with multiple sexual partners.** Exposure to sexual fluids of infected persons increases the risk of viral transmission.

**Institutionalized clients and staff.** Hepatitis B may be spread when infected blood comes in

contact with skin lesions or mucous membranes. An increased risk of transmission is present in institutions for the developmentally disabled.

**Health/dental care providers and hemodialysis patients.** Those with repeated exposure to blood or blood products are at increased risk of acquiring hepatitis B infection.

**Newborns with infected mothers.** Women with active hepatitis B infections can transmit the virus to an infant at birth. Infections acquired in infancy are much more likely to progress to chronic infections with complications such as cirrhosis or liver cancer.

### Intervention Points, Strategies and Effectiveness

Public health efforts to reduce hepatitis B transmission are directed in three areas. These are preventing transmission, reducing risk of infection after exposure, and immunization.

**Preventing transmission.** Exposure to potentially infected body fluids should be eliminated. Health-care and public-safety personnel should use standard precautions to protect themselves and their clients. Education about safe sex practices and access to condoms should be available to young adults to prevent the transmission of hepatitis B and other sexually transmitted infections. Injecting drug users should have access to sterile needles and drug treatment programs. Aseptic technique using sterile needles should be practiced by those providing tattooing or acupuncture services.

**Reducing risk of infection after exposure.** When exposure has occurred, specific immune globulin for hepatitis B coupled with vaccine will avert infection in most people. Such intervention is recommended for infants born to infected women, those with an identified high risk needle exposure, and sexual contacts of infected persons.

**Immunizing high risk groups.** Universal immunization could eventually eliminate hepatitis B infections. Routine immunization is recommended at infancy, when the cost of vaccine is low, or at adolescence, when there is increasing likelihood of involvement in activities which can result in infection.

Immunization is also recommended for those in high risk groups including injecting drug users, sexual and household contacts of chronic hepatitis B carriers, health-care and public-safety personnel,

staff and clients of institutions for the developmentally disabled, hemodialysis patients, inmates of long-term correctional facilities, those with multiple sexual partners, and people receiving clotting factor concentrates.

Universal immunization has the potential for controlling hepatitis B.

### ***Data Sources***

Washington State Department of Health, *Annual Communicable Disease Report 1994*.

Centers for Disease Control and Prevention, *Summary of Notifiable Diseases, United States, 1994*.

Washington hospitalization data: Comprehensive Hospital Abstract Reporting System (CHARS).

### ***For More Information***

American Public Health Association, *Control of Communicable Disease Manual*, 1995.

Washington Department of Health, Office of Epidemiology.

Washington Department of Health, Hepatitis B Program.

Washington Department of Health, Immunization Program.